# Function and benefits

- **No moving parts**
- **Lowest pressure lost and influence on the tube cross-section**
- **Conveniently monitor large tubes**
- **A measuring probe for a wide range of tubing diameter**
- **High-quality materials (stainless steel and ceramic)**
- **Measurement insert can be replaced without opening the tube**

If an electrical lead moves perpendicularly to a magnetic field, the movement in this wire induces a voltage (Faraday's law of induction). With this measurement principle, the conductive liquid of the "lead". The magnetic field is perpendicular to the flow direction. The induced voltage U is directly proportional to the flow speed v.

$$U = k \cdot B \cdot D \cdot v$$

$k =$ device constant
$B =$ strength of the magnetic field
$D =$ electrode spacing
$v =$ local speed

The voltage U is extracted at the electrodes, centre point and earth electrode (sleeve) and converted to a speed-proportional 4 - 20 mA signal.
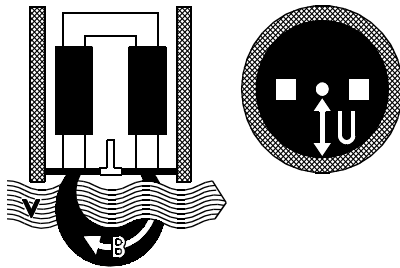
Installation note

The supplied welding sleeve or the plastic clamp enable the use of a device various nominal tubing widths. Markings on the welding sleeve indicate how wide the sensor should be immersed into the tube diameter.

Local programmability of parameters

The FIS sensors can be combined with the OMNI intelligent sensor family . This combination enables a multitude of local parameter changes.

OMNI-FIS..

Programming with magnet ring:
With the aid of the display and of the movable ring, numerous parameters can be conveniently set on the spot.

Universal switching outputs

The push-pull transistor outputs of the OMNI electronics enable the simplest installation. The outputs can be connected like a PNP or an NPN switch and behave accordingly, without programming or wire breaks.

You are assured of resistance to short circuits and pole reversal. Overloads or short circuits are shown in the display.